

Permit Conditions

1) **Condition 4.B: Pollutant monitoring for compliance demonstration**

There is a 245 tpy emission cap per pollutant. Given the proposed permit conditions, the tracking of emissions must be applied not only to NO<sub>x</sub> and CO but also to the other pollutants, i.e., particulate matter, SO<sub>x</sub>, and VOC. At a minimum, monthly recordkeeping should be required for all pollutants to assure compliance with the 12-month rolling average.

EPA acknowledges that Condition 4.B applies to pollutants which will have a continuous emission monitoring system (CEMS), i.e. NO<sub>x</sub> and CO. Please include a condition that states the maximum rated heat input of each CTG is 451 MMBtu/hr (HHV). We have assumed this value because it was included in the emission estimates for the F-factor calculation for the potential to emit for NO<sub>x</sub> (at 5 ppm), CO (at 15 ppm) and VOC (at 2 ppm).

We also acknowledge that Conditions 6.C.1.a and 6.C.1.b will help the Permittee track other pollutants such as PM/PM<sub>10</sub>, SO<sub>2</sub>, and VOCs in order to comply with the synthetic minor limit. For SO<sub>2</sub> emissions, please see comment #9 below.

For particulate matter, we understand that the emission estimates were based on a combination of manufacturer's data and engineering assumptions (including an assumed formation of ammonium sulfate). It is unclear whether it is appropriate to rely on AP-42 emission factors, particularly given that annual source testing is required; therefore, it is unclear whether this should be included as a compliance demonstration option. For clarification, when relying on an emission factor derived from the annual source test results, the most recent annual source test results should be used where such tests are representative of equipment operations.

For VOCs, although emission estimates were based on the F-factor calculation for VOC at 2 ppm (and 451 MMBtu/hr), Condition 6.C.2 requires that a VOC emission factor be factored from CO CEMS data for startup and shutdown events or from AP-42 emission factors. Meanwhile, Condition 6.D.8 specifies that a surrogate measurement will be used for VOC emissions. This condition, however, does not refer back to CO CEMS data, which we believe is the intent of the surrogate measurement approach for VOC compliance demonstration. Therefore, similar to the comment for particulate matter, it is unclear whether it is appropriate to rely on AP-42 emission factors, particularly given the CO CEMS data availability.

Pinal County agreed to add a condition that requires monitoring of fuel usage as part of emissions compliance demonstration. We understand from Pinal that the Permittee's application stated a maximum heat input of 451 MMBtu/hr. Pinal County should verify that fuel usage is a HHV.

2) **Condition 4.C.1: Facility-wide emissions cap**

Please confirm that 245 tpy emission cap applies to all equipment – 12 turbines *and* fire pump engine.

Pinal County will revise this permit condition to reflect this.

- 3) **Condition 4.D.2: Calendar year compliance demonstration for Fire Pump Engine**  
Permittee should install a non-resettable hour meter to emergency fire pump to demonstrate compliance with the 200 hours per year limit. Furthermore, recordkeeping should be maintained that confirms at least the calendar year hour meter reading. We request that such permit conditions be added.

Pinal County will add a permit condition requiring the installation of a non-resettable hour meter and recordkeeping of meter readings.

- 4) **Condition 5.C.1: NO<sub>x</sub> limit per NSPS KKKK**

It is unclear whether the Pinal County intends for the Permittee to demonstrate compliance not only with the 245 tpy emissions cap and 25 ppmvd @ 15 percent O<sub>2</sub> value but also the 1.2 lb/MWh. How is the permittee complying with 1.2lb/MWh? To demonstrate compliance with the lb/MWh limit, we suggest a permit condition(s) be included that requires some form of monitoring and recordkeeping of the MW or lb/MWh to demonstrate compliance.

Pinal County will delete the reference to 1.2 lb/MWh

- 5) **Condition 6.A.3: CTG Test method frequency for VOC emissions**

It appears that annual testing is required for all pollutants except for VOC emissions. Please add a condition requiring either annual testing or testing once every permit term for VOCs.

Pinal County will add a permit condition requiring test method frequency for VOC emissions.

- 6) **Condition 6.C.3:** This condition appears repetitive and the wording is unclear. Please delete this condition from the permit.

Pinal County will delete this condition from the permit.

- 7) **Condition 6.D.9: Periodic Monitoring Fire Pump Engines**

A limit of 500 ppmv sulfur content is required for the diesel fuel. We understand that the intent for demonstrating compliance with this requirement is for the Permittee to purchase fuel that meets this sulfur content. To assure compliance, permit conditions should be added to specify that the sulfur content be based on an applicable ASTM method and that recordkeeping be maintained on-site for each fuel delivery.

Pinal County will revise this permit condition.

- 8) **Condition 6.F: Semi-annual compliance reporting**

Please revise the last sentence in the paragraph as it implies report is submitted once a year as opposed to twice a year (“semi-annual”). Typically, reports are due on the 30<sup>th</sup> day following the end of the semi-annual period.

Pinal County will revise this permit condition to reflect that semi-annual reports are due twice a year.

9) **SO<sub>2</sub> Potential to Emit (PTE) Estimates and Emission Cap**

Please assure consistency between the emission estimate assumptions and associated permit conditions for SO<sub>2</sub>. Based on our review of the TSD and proposed permit conditions, we noted the following:

- Natural gas sulfur concentration – Condition 5.J.1 states a 20 grains/100 scf (which we presume is based on a dry standard) of total sulfur, which is the equivalent of 0.06 lb SO<sub>2</sub>/MMBtu. This Condition also refers to a hydrogen sulfide content of 5 grains/100scf. Meanwhile, TSD Section 7.A. (*Allowed Emissions*) cites a sulfur concentration of 5 grains/100 dscf; this is equivalent to 0.016 lbs SO<sub>2</sub>/MMBtu.
- Acid Rain definitions (40 CFR Part 72.2) for natural gas – The regulations are prescriptive regarding the allowable sulfur content for natural gas and pipeline (*emphasis added*) natural gas. The 20 grains/100 scf is consistent with the Acid rain definition of **natural gas**. **Pipeline natural gas** is defined as 0.5 grains/100 scf of total sulfur. We believe the intent is to assure compliance with pipeline natural gas. Regardless, whichever natural gas definition is applied, the applicable Acid Rain monitoring requirements, at a minimum, should be cited in the permit conditions. As a side note, although condition 5.A. (e.g., most stringent applicable requirement shall prevail and be enforceable) may appear to resolve this inconsistency in the most stringent sulfur content requirement, it is necessary to specify the type of natural gas.

Pinal County will review the permit conditions that specify the sulfur content requirement, which in turn is considered (as part of Acid Rain compliance demonstration) in determining SO<sub>2</sub> emissions and therefore compliance with the emissions cap. Therefore, conditions should include, at a minimum: (a) specify type of natural gas (for consistency with Acid Rain requirements), (b) specify the sulfur concentration (e.g., grains/scf), (c) provide for compliance demonstration of the sulfur concentration (fuel supplier information, recordkeeping, etc.), and (d) a lb/MMBtu limit.

10) **General comments**

There are inconsistent references to turbine units throughout permit—sometimes referred to as CTGs, turbines, CTG units, or GE LM6000 PC Sprint NXGEN, or GE LM6000 PC Sprint NXGEN CTGs. Please use a consistent reference.

Pinal County will revise the permit accordingly.

There is reference to “respective fuels” in a few places throughout the permit and TSD. These terms are ambiguous and not enforceable.

EPA understands that only natural gas will be fired at the source. Pinal County will revise the permit and TSD accordingly.

Technical Support Document

- 11) **PM is a regulated pollutant** – Although there is not a NAAQS for PM, it is a regulated pollutant. Please include emission estimates for PM. If it is assumed that PM equals PM<sub>10</sub>/PM<sub>2.5</sub> estimates, such a statement should be included in the TSD.

Pinal County will add a statement in the TSD to reflect this. It should also be clear that the compliance demonstration is required for PM emissions.

- 12) **Acid Rain Permit Application** (See also Condition 5.M)

We understand that the Acid Rain Permit Application has been filed with your agency. Please reference this in the TSD.

Pinal County will add a statement in the TSD Section 10.D.6.